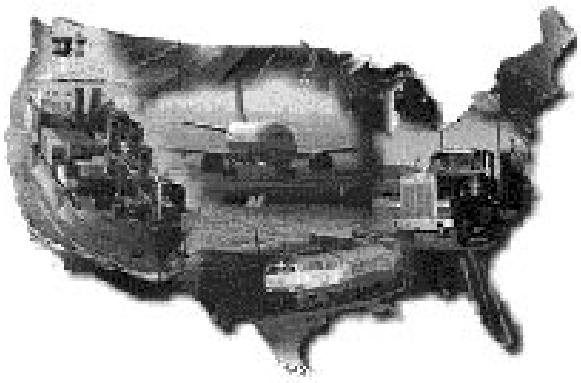


U.S. Department of Energy

National Transportation Program

The U.S. Department of Energy (DOE) ships radioactive materials in support of its research and development, environmental restoration and cleanup, and National defense activities. Like other shippers, DOE follows applicable International, Federal, Tribal, State, and local government requirements. In addition, DOE administers its shipments according to a series of Departmental Orders (written requirements) and other internal guidance. Certain DOE shipments are

regulations to minimize the possibility of theft, diversion, or attack on certain shipments. These requirements are detailed in *CFR, Title 10*.

Other agencies regulating handling and transport of radioactive materials include the U.S. Postal Service, the Occupational Safety and Health Administration (OSHA), and the U.S. Environmental Protection Agency (EPA).

Packaging

Radioactive materials packaging standards required by DOT and NRC regulations are the primary means to protect people and the environment during radioactive materials transport. The greater the potential consequences of a material release, the more stringent packaging requirements become. Packaging is selected based on activity, type, and form of material to be shipped. Four basic types of packaging are used: Excepted, Industrial, Type A, and Type B. Another option, Strong-Tight packaging is still available for some domestic shipments.

Marking, Labeling, and Placarding

Federal regulations require that shippers meet specific hazard communication requirements in marking and labeling packages containing radioactive materials. Markings provide the proper shipping name, an emergency response identification number, the shipper's name and address, and other important information. Labels are placed on opposite sides of a package to identify the contents and radioactivity level. Shipments with extremely low levels of radioactivity that would present no severe hazard if involved in a transport accident are excluded from labeling requirements.

The required label is determined by type of material shipped and measured radiation levels of a package's contents. Shippers of radioactive materials use one of three labels: Radioactive White I, Yellow II, or Yellow III.

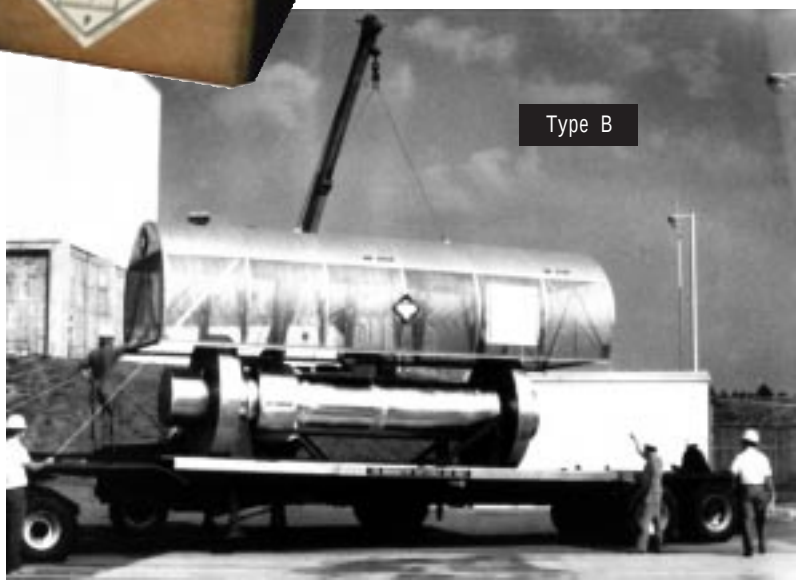
Vehicles transporting certain shipments of radioactive materials must also be clearly placarded on all four sides. Some shipments with a high level of radioactivity (e.g., high-level waste, cesium, cobalt sources, spent

Excepted

Industrial

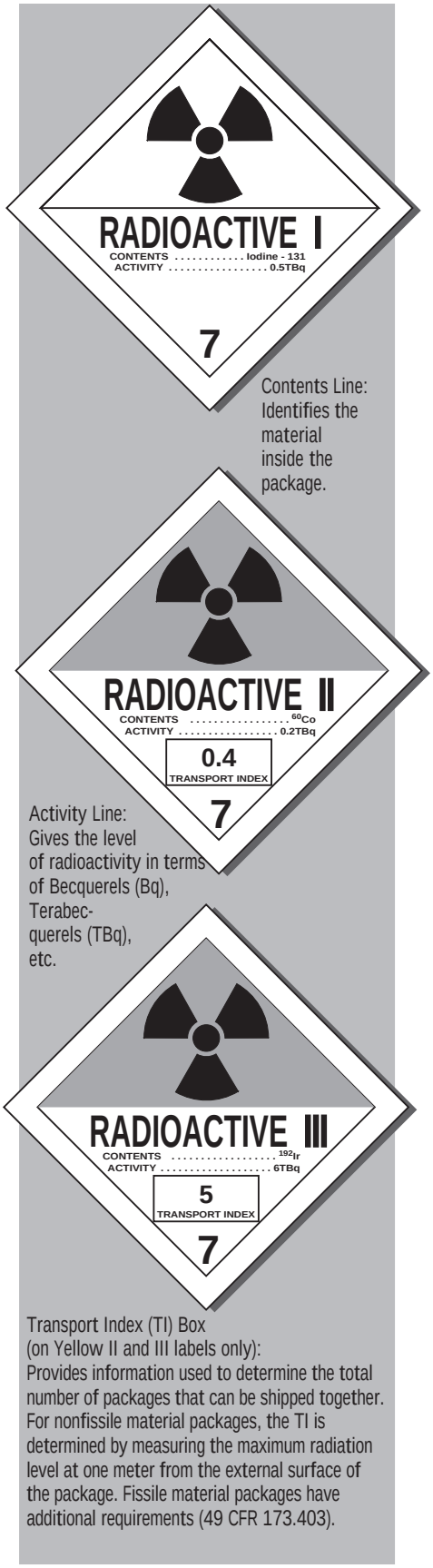
Four basic types of packagings are used for the transportation of radioactive materials: Excepted, Industrial, Type A, and Type B.

Type A



Type B

Shippers of radioactive materials use one of three labels.



nuclear fuel) are identified as Highway Route Controlled Quantity (HRCQ) shipments and must have the required Radioactive placard placed on a square white background.

Correct use of markings, labels, and placards is a responsibility of the shipper and carrier. Markings, labels, and placards identify the hazardous contents to emergency responders in the event of an accident.

As with other hazardous materials transportation regulations, knowing or willful violations of marking, labeling, and placarding requirements are subject to legal penalties, including fines and/or imprisonment.

Shipping Papers

Shipping papers are prepared by the shipper and given to the carrier. These documents contain additional details about the cargo and include a signed certification that the material is properly classified and in proper condition for transport.

Shipping papers also contain emergency information (e.g., contacts and telephone numbers). Carriers must keep shipping papers readily available during transport for inspection by appropriate officials.

Routing

Highway carriers of HRCQ shipments are required to use "preferred routing," which restricts transport to specific interstate highways and takes into consideration such factors as accident rate, transit time, population density, activities, time of day, and day of week.

A preferred route is an Interstate System highway, or alternative route determined by DOT or selected by State routing or Tribal authorities in accordance with DOT guidelines. The offeror or carrier, as appropriate, of HRCQ shipments must select the preferred route to be used and prepare a written plan for NRC showing origin and destination of the shipment, scheduled route, all planned stops, estimated time of departure and arrival, and emergency telephone numbers. NRC checks routes for security purposes.

Rail routes are determined by the shipper and railroad companies based on safety, best available trackage, schedule efficiency, and cost effectiveness.

Currents, weather conditions, and geological features that could impact safe passage limit the number of oceanic routes. Barge routes share similar limitations. The U.S. Coast Guard participates in establishing routes.

Prior Notification

NRC regulations provide for written notice to Governors or their designees in advance of HRCQ shipments (e.g., unclassified spent nuclear fuel and high-level waste) through their States. Federal regulations allow States to release certain advance information to local officials on a need-to-know basis. States have implemented their own policies and procedures for such notifications.

Although Tribal governments are not included in these NRC provisions, DOE has elected, by policy, to notify Tribes of DOE HRCQ shipments through their jurisdictions. NRC is in the process of changing the requirements to include Tribes under their notification rule.

Training

Anyone involved in the preparation or transport of radioactive materials,

including loading and unloading, packaging, documentation, or general transport safety is required by law to be properly trained.

Operators of vehicles transporting HRCQ shipments receive special training that covers the properties and hazards of the radioactive materials being transported, hazardous materials transport regulations, and emergency procedures. Operators must be recertified every 2 years.

Emergency Preparedness

DOT and NRC have established requirements for reporting radioactive materials incidents. They are listed in *CFR, Title 49, Parts 171.15 and 171.16* and *Title 10, Part 20.2202,* respectively.

The National Response Center in Washington, DC, is the operations and communications center for the National Response Team (NRT). The Center (staffed by the U.S. Coast Guard) does not respond to incidents, but passes along information to those who do. NRT membership includes the EPA, the Federal Emergency Management Agency, DOE, and several other Federal agencies. Contacting the Center meets basic Federal reporting requirements, but there may be other State, Tribal, or local regulations.

As with any transportation accident, local, Tribal, and State police, fire departments, and rescue squads are the first to respond to accidents involving radioactive materials. DOE maintains eight Regional Coordinating Offices (RCOs) across the country, staffed 24 hours a day, 365 days a year, to offer advice and assistance. Radiological Assistance Program teams are available to provide field monitoring, sampling, decontamination, communications, and other services as requested.

Regulations govern all aspects of radioactive materials transportation, including marking and labeling of packages and placarding of vehicles.

Liability Coverage

Public Law 95-256, known as the Price-Anderson Act, requires the nuclear industry and DOE to provide financial protection to the public in case of a major nuclear accident. Carriers are required to maintain at least $5 million in liability insurance.

Other Requirements

Organizations representing different transport modes often establish their own standards. For example, all North American shipments by rail, which are interchanged between carriers, must meet Association of American Railroads (AAR) interchange rules. Equipment in interchange must meet AAR *Manual of Standards and Recommended Practices* requirements.

Safety and Compliance

Radioactive materials have been shipped safely in this country for more than 50 years. As with other shipments, radioactive materials shipments have been involved in accidents. However, no deaths or injuries have resulted from exposure to their radioactive contents.

Strict enforcement of regulations and rigorous training in regulatory compliance are part of the continuing effort to maintain this record.

Additional information on DOE s National Transportation Program may be obtained from:

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Albuquerque Operations Office
P.O. Box 5400, MS SC-5
Albuquerque, NM 87185-5400

Phone: 505-845-6134
Fax: 505-845-5508

Website:
http://www.ntp.doe.gov/

DOE Center for Environmental
Management Information
P.O. Box 23769
Washington, DC 20026-3769

1-800-7EM-DATA
1-800-736-3282

Website:
http://www.em.doe.gov/

Transportation Resource Exchange Center
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University of New Mexico
1001 University Blvd., SE
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